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T-D

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY, DOCKET NO.
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09/473,495 12/28/99 ATSUMI

T M2009-13

EXAMINER

IM52/1011

MORRISON LAW FIRM  
145 NORTH FIFTH AVENUE  
MOUNT VERNON NY 10550

FISCHER, J

ART UNIT

PAPER NUMBER

1733

DATE MAILED:

10/11/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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<b>Office Action Summary</b>	<b>Application No.</b> 09/473,495	<b>Applicant(s)</b> ATSUMI ET AL.	
	<b>Examiner</b> Justin R Fischer	<b>Art Unit</b> 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |                                                                                              |                                                                             |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:                                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson (US 3,646,610) in view of the admitted prior art (Page 1, Lines 18-25), Sugiyama (JP 08131588), Kusumoto (US 6,106,413), and Utsono (US 5,231,783). As best illustrated in Figure 17, Jackson describes a method for forming a golf club shaft around a mandrel comprising the following steps: forming a first angled layer (62'), wrapping said first angled layer around an inner straight layer, forming a first straight layer (66'), wrapping said first straight layer around said first angled layer, forming a second angled layer (68'), wrapping said second angled layer around said first straight layer, forming a second straight layer (72'), and wrapping said second straight layer around said second angled layer. Additionally, the reference suggests that the layered structure (composite of four previously mentioned layers) is wrapped with cellophane tape and heated (conventionally accomplished with oven) to cure said layered structure (Column 3, Lines 40-44). Though the reference does not expressly state the removal of the mandrel and subsequently trimming the ends, such steps are conventionally used in the manufacture of shafts and additional composite bodies. However, the reference is silent with respect to the pre-bonding of separate plies and the use of inner and outer reinforcement layers

that are perpendicular and parallel to the longitudinal axis of the mandrel, respectively. Both the admitted prior art and Utsono suggest the gluing or bonding of separate plies to form angled layers in the manufacture of golf club shafts. Additionally, Sugiyama describes the conventional use of inner, hoop reinforcing layers (perpendicular to axis of mandrel), especially in proximity to straight layers, to prevent separation and optimize the flexural rigidity improving effect. Furthermore, Kusumoto suggests that outer reinforcing layers are conventionally used to specifically reinforce the end portion of shafts, in accordance to the claimed limitations as depicted in Figure 5 by applicant (Column 13, Lines 11-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ both an inner and outer reinforcing layer, as suggested by Sugiyama and Kusumoto, in the general method of constructing a golf club shaft, outlined by Jackson, as set forth below.

It should be initially noted that Jackson describes the formation of angled layers **62' and 68'** by spirally winding or braiding a plurality of fibers (Column 5, Lines 25-32). Though the reference does not describe the pre-bonding of plies, the reference communicates the general use of fibers arranged in a crossed or angled manner to provide the appropriate rigidity and strength. Furthermore, angled layers can be obtained by a variety of conventional methods, including the use of a woven fabric or the use of bonded prepegs. For example, the applicant has disclosed as prior art on page 1 of the specification (Lines 18-25) that angled layers are conventionally formed by gluing prepegs together at angle plus theta and minus theta relative to the longitudinal axis. Additionally, Utsono suggests a method of bonding prepeg strips to

form a prepreg tape base before winding (Column 4, Lines 8-14). Though the bonding of prepreg sheets does not form an angled layer in Utsono, the reference is an additional illustration of bonding prepreg sheets prior to applying them to the mandrel.

Regarding the use of inner and outer reinforcing layers, Sugiyama and Kusumoto clearly suggest that the employment of said layers, respectively, will provide a stronger integrated structure and reduce the possibility of ply separation. Sugiyama states that an inner hoop reinforcing layer has the capability of restricting an adjacent straight layer and reducing the possibility of separation. The use of such a layer in Jackson would have been particularly appropriate since the construction outlined by Jackson contains an inner straight layer without any additional reinforcement. With respect to the outer reinforcing layer, such straight layers are conventionally used to reinforce the end portions of shafts, as evidenced by Kusumoto (Column 13, Lines 11-15). It should be noted that this outer reinforcing layer is provided in an analogous manner to that described by the claimed invention, which the applicant has depicted in Figure 5. Thus, the employment of both an inner and outer reinforcing layer would have been obvious to one of ordinary skill in the art at the time of the invention for the benefits detailed above.

Lastly, regarding the angle and thickness of the second angled layer, Jackson is silent with respect to the specific characteristics of said second angled layer. Though it is unclear if the figures provided by Jackson are "working drawings", they can be used to obtain gross relative dimensions. As such, it is evident from Figure 17 that the angle formed by cross layers **63'** and **64'** is slightly greater than 90° and thus falls well within the range of 70°-150° suggested by the claimed invention. With respect to the

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thickness of said second angled layer, it is the examiner's position that the thickness would fall between 0.04 and 0.1 millimeters, as these dimensions fall within the conventional ranges used in similar golf club shafts. Furthermore, with the addition of an inner and outer reinforcing layer, the thickness of each layer would have to be appropriately adjusted to maintain a desired, lightweight golf club shaft.

***Response to Arguments***


3. Applicant's arguments with respect to claim 20 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

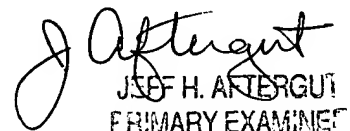
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Justin Fischer

October 9, 2001

  
JEFF H. AFTERGUT  
PRIMARY EXAMINER  
GROUP 1300